System Configuration Team (SCT)
Reasonable & Prudent Measure #26
Meeting Notes
March 19, 1998

I. Greetings and Introductions.

The March 19 meeting of the System Configuration Team was held at the National Marine Fisheries Service's offices in Portland, Oregon. The meeting was co-chaired by Bill Hevlin of NMFS and Jim Ruff of the Northwest Power Planning Council staff. The agenda and a list of attendees for the March 19 meeting are attached as Enclosures A and B.

The following is a distillation (not a verbatim transcript) of items discussed at the meeting, together with actions taken on those items. Please note that some enclosures referenced may be too lengthy to routinely include with the meeting notes; copies of all enclosures referred to in the minutes are available upon request from Kathy Ceballos of NMFS at 503/230-5420.

II. FFDRWG and AFEP Updates.

John Ferguson distributed Enclosure C, a list of topics discussed and issues raised at the March 4 FFDRWG meeting. The most important issue, from the SCT perspective, was the discussion of John Day dam extended-length bar screen installation. Ferguson explained that FFDRWG has been discussing issuing a contract to install all of the screens at once; at its last meeting, the group also discussed using a phased approach, in which 21 screens would be built and installed in 1999, and the other 25 in 2000. Ferguson explained that the phased approach may be more attractive, because it will allow further mechanical and biological testing of the screens during the 1999 season, prior to awarding a contract for the rest of the screens. Basically, he said, FFDRWG thinks the phased approach makes a lot of sense, and asked that I bring it to SCT's attention today, perhaps with the goal of discussing the idea in more detail at the April SCT meeting. After a few minutes of discussion, it was so agreed.

At its March 4 meeting, FFDRWG also discussed recent results from some of the model work being done in support of the 1998 spill test at John Day. Essentially, Ferguson said, we tried to make a south spill work, from the standpoint of getting fish out of the forebay most efficiently; however, we've been unable to achieve that goal -- it simply doesn't work with the

present tailrace configuration, and for that reason, a primarily north pattern was selected (please see Enclosure C for details of this and other items discussed at the March FFDRWG meeting).

Ferguson added that a number of issues have been identified with the 1998 spill program at John Day -- the duration and volume of spill called for in the 1998 steelhead supplemental Biological Opinion, as well as the cost of this operation, both in terms of lost generation and decreased intertie stability (please see Page 3 of Enclosure C for details). Ferguson said the Corps' current plan is to monitor 12-hour spill at John Day, over the spring and summer outmigrations, using the north spill pattern developed at WES.

Ferguson added that the Corps currently has no plans to do any radio telemetry monitoring in the forebay at John Day, because no funds have been allocated for this work in FY'98. If there is some desire to gather information on forebay delay under the new spill pattern, Ferguson said, the Corps and USGS could do that work in 1998, but it will cost an additional $75,000.

The other issue I wanted to raise for your attention from the March 4 FFDRWG meeting, Ferguson continued, is the scope of Bonneville smolt monitoring. At that meeting, he said, there was some informal discussion of changing the scope of the B2 smolt monitoring program, to make it PIT-tag only. If people are seriously contemplating that type of change in scope, Ferguson said, we need to hear about that as soon as possible.

Moving on, Ferguson touched on some of the items updated at the March 4 meeting; please see pp. 1-2 of Enclosure C for details. Ron Boyce raised a concern about Item 2 of this report, the B2 TIE removal to test the trash chute/corner collector concept; it was agreed that, following the delivery of COE Portland District's report on this activity next week, there will be a FFDRWG conference call on March 30; if concerns about the TIE removal cannot be resolved during that call, there will be a special SCT conference call to resolve them.

COE's Mike Mason provided a report on the February FFDRWG meeting in Walla Walla. The meeting consisted mainly of updates, he said; we discussed drawdown and the surface collection appendix of the feasibility study; one of the issues that arose had to do with adult passage under drawdown, and the fact that, if drawdown is the option chosen, we will have to start work as soon as possible. It was agreed to form a FFDRWG subgroup to look at that problem. Another subgroup was formed to look at the surface collection combinations for the feasibility study, he added.

Moving on, Mason said that, at the February meeting, another update was provided on surface collector construction status; the bottom line is that the prototype is expected to the ready by April 1. Most of the rest of what we talked about has already been addressed at the last SCT meeting, Mason added.

III. Lower Granite Surface Bypass – 1998 Operations at Lower Granite.

Jim Ceballos of NMFS described the proposed 1998 spill operation at Lower Granite; he

distributed Enclosure D, a series of tables showing total flow and spill levels at Lower Granite under three operational scenarios: spill to ½ gas cap for 24 hours, reduced powerhouse operation with turbine volume added to proposed spill volume, and spill to 115% TDG 24 hours per day. These scenarios are charted for total river flow levels from 17.6 Kcfs up to 183.6 Kcfs (please see this document for details).

Having talked with the Corps and with FPAC, Hevlin said, it sounds to me as though everyone supports a 24-hour spill program at Lower Granite, because of the planned research. The main issue I've heard it is, what is the amount going to be? Should it be up around 45 Kcfs, or down around 20 Kcfs? COE's Tim Wik spent a few minutes going through another document, which explained the Corps' proposed operation at Lower Granite for the 1998 SBC test:

- 1. For the period: 13 April to 31 May
- 2. Spillbay 1 passes 4 Kcfs for SBC flow, bay 2 passes 1.8 Kcfs for training flow.
- 3. Load all six units to lower end of 1% peak efficiency in the following order: 1, 4, 5, 6, 2, 3.
- 4. Begin spilling additional water at approximately 87 Kcfs, up to total spill of 24 Kcfs over 24 hours. Spill volume now equal to the amount of spill cap for 12 hours. This level of spill is reached incrementally as flows go up, not a jump to a spill level at a certain flow trigger. Under this operation, the percentage of fish passed through spill, and thus left in the river, increases as flow increases.
- 5. At 110 Kcfs, begin ramping up units 4, 5 and 6 to the upper end of the 1% peak efficiency band.
- 6. At 120 Kcfs, increase spill as flow increases until gas cap of 45 Kcfs is reached (approximately 142 Kcfs total discharge). Between flows of 120 Kcfs and 142 Kcfs, spill volume is greater than 12-hour spill to gas cap.
- At flows greater than 142 Kcfs, units 1-3 will have to be operated above the lower limit of 1% peak efficiency, and the BGS will have to be placed in the stored position. When full powerhouse capacity is reached, excess would be spilled.

The group spent a few minutes discussing this proposed spill program. In response to a question from Hevlin, it was observed that the draft supplemental Biological Opinion calls for maximized spill at all Snake River projects, up to the 120% TDG cap. It also specifies that all fish collected are to be transported. The maximized spill period is 12 hours, he added. So it is a spread-the-risk strategy, but the supplemental BiOp doesn't say split things 50-50 between transport/in-river, Hevlin observed.

It's also important to note that the draft supplemental BiOp reduces the spill trigger at Lower Granite from 100 Kcfs to 85 Kcfs, Boyce said. So to a large extent, the operation specified in the supplemental BiOp is compatible with this proposed operation at Lower Granite, observed another meeting participant.

So the question becomes, what kind of an operation is going to give us the best information from this test? Hevlin asked. After all, we prioritized a lot of funding, and sacrificed a number of other proposed projects, so that we could do this test in 1998. The other thing we need to factor in is people's concerns about passage conditions and survival at Lower Granite.

If this test was not occurring, what would be the spill operation required at Lower Granite under the 1998 supplemental Biological Opinion? Boyce asked. It would be 22 Kcfs per hour over 24 hours, replied Ceballos. Another meeting participant said he thought the requirement would be 45 Kcfs per hour for 12 hours; the response to Boyce's question was not clearly articulated. Eventually, Boyce said that his response to Wik's proposed 1998 spill operation at Lower Granite is that ODFW does not want to reduce fish protection if the spill period is changed from 12 hours to 24 hours. Steve Pettit added that IDFG's concern is that this research protocol calls for no spill until total Snake River flow reaches 88 Kcfs.

Wik further summarized what he though he heard Boyce say: that he does not want to see any reduction in fish passage efficiency as a result of this research. It sounds as though there are some people in this room who would like to see 45 Kcfs spill on a 24-hour basis, given the fact that FPE is a concern, said Hevlin. If that's the case, it could really change the results from this test; from what I've heard, it sounds as though the Corps would prefer that the 24-hour spill volume be as low as is practicable. Mike Mason observed that, at 45 Kcfs spill, it is not possible to direct-load barges for transportation at that project; at 22 Kcfs spill, direct loading is possible. Perhaps there is a middle volume, at which we can obtain valid test results without sacrificing FPE, Hevlin suggested.

The SCT discussed Rod Woodin's suggestion that, for the 1998 SBC test at Lower Granite, the Corps start out by spilling 30 percent of total river flow, then evaluate the resulting percentage of the juvenile migration transported vs. the percentage passing the project via spill. The spill percentage can then be adjusted upward or downward, based on that evaluation, to increase or decrease the percentage of the run being transported.

Ultimately, it was agreed that the Ceballos will model Woodin's suggested operation, as well as the operation outlined in the 1998 supplemental Biological Opinion, with no assumptions about the effects of the collector factored into the model. The results of these model runs will then be discussed at the April SCT meeting.

After conferring with project personnel, Wik said that, while they are open to considering an alternative spill operation at Lower Granite during the test period, they feel that a constant powerhouse operation is more important than a constant percentage of total river flow spilled.

It sounds like there are now two issues, Hevlin said – first, acceptable FPE levels, and second, what is an acceptable powerhouse operation to do a reliable evaluation, from a research standpoint. It was agreed to hold an SCT conference call to resolve this issue on Wednesday, March 25 at 2 p.m.

IV. Ice Harbor Separator Evaluation Update.

As most of you are aware, Hevlin said, construction of the Ice Harbor separator has been delayed. The Corps has distributed a letter explaining the reasons for the delay; it was agreed to defer discussion of this topic until a future SCT meeting.

V. Ice Harbor Spillway Modifications -- IT Response to Navigational Fix Issue, Decision on Contract for End-Bay Deflectors and Guide Wall Extension.

The IT discussed this issue at its last meeting, Hevlin said; I didn't hear the IT agree that the Corps should use CRFM funds to fix the navigation problem at Ice Harbor, but they didn't come right out and oppose that idea, either. In response to a question, Witt Anderson said the Corps is proceeding with the navigation fix in 1998; the region has until May 15 to make a decision about the contract for the end-bay deflectors and guide wall extension, to allow the contractor time to procure materials prior to the in-water work window.

Pettit said that, after considerable debate, FPAC has recommended that the Ice Harbor work go forward in 1998 – if this work is necessary, he said, the feeling is that we might as well go ahead and get it out of the way. In that case, said Anderson, it's a done deal. Hevlin observed that, during the IT discussion of this issue, Doug Arndt said that it is appropriate to use CRFM funds to fix the navigation problem at Ice Harbor, because the navigation problem was caused by the installation of flip-lips to benefit fish. On the other side of the coin, Hevlin noted, Arndt said that, in the event that a navigation project adversely effects fish, then navigation funds will be used to correct the problem.

VI. Comments on USBR Report: *"Review of Structural Alternatives for Gas Abatement at Grand Coulee*."

A number of entities have submitted comments on Reclamation's report, said Hevlin – the Colville Tribes, Columbia River Fish Farms, ODFW, Chelan PUD, the Corps, NMFS EPA and the Council. I'd like to discuss those comments today, he said.

Jim Ruff spent a few minutes summarizing some of the major comments received to date. One point common to many of the commentors had to do with the need for a system operational alternative to abate gas, and the need for a systemwide perspective – we need to evaluate the whole system, rather than just the Lower Snake and the Lower Columbia, which are the current focus of the Corps' Gas Abatement Study, he said. The Mid-Columbia arm is not being studied, Ruff said, and many commentors felt that there could be some cost efficiencies to be gained from a systemwide approach. Some of the structural fixes being contemplated at Grand Coulee are very expensive, and it may be cheaper to abate gas either above or below the project.

Oregon is advocating a modeling analysis, similar to the one that was done for DGAS, which fully characterizes the gas abatement needs at Grand Coulee, said Boyce. Such an approach would also allow us to fully evaluate different gas abatement alternatives at Grand Coulee. We would also like to see that effort integrated with the Corps' DGAS program, to provide that systemwide perspective, he said.

Actually, that systemwide approach is the next item on today's agenda, Ruff said – we will be getting into that in more detail.

Other commentors made the point that the Upper Columbia – specifically the Canadian projects – also need to be included in a systemwide approach.

A second comment focuses on the need to fully investigate immediate operational alternatives to reduce TDG at Grand Coulee, Ruff continued. The structural changes will take considerable time to plan, design and construct; in the interim, operational changes are the only available option to limit the amount of spill and to reduce gas production at Grand Coulee. Available operational alternatives include the removal of Grand Coulee from the spill priority list and a reduced reliance on the outlet works at that project, particularly during the spring and summer period.

Another comment was that the Bureau reduce the number of options selected for detailed study, Ruff continued. Specifically, NMFS recommended that Options 1, 2 and 4 be looked at in more detail; the Council recommended Options 1-6, while others recommended that only the cheapest alternatives be considered. Others suggested that the Bureau consider new alternatives, such as baffling the lower portion of the spillway, below the conduit outlets, the construction of an elevated tailrace below the stilling basin and the evaluation of a selective withdrawal system.

The next major comment was that the gas abatement work the Bureau is proposing to do at Grand Coulee needs to be fully integrated with the Corps' DGAS program, Ruff continued. It was further suggested that Grand Coulee and Chief Joseph need to be looked at as a composite, in terms of operations to minimize TDG. Again, said Ruff, there could be some cost efficiencies to be gained by looking at both projects in tandem. NMFS added the comment that, if degassing is the strategy that will be pursued, Chief Joseph is the project that should receive the highest priority. The Colville Tribes and the Columbia River Fish Farms commented that their concern is water quality in Lake Rufus Wood, because of resident fish concerns.

Another comment was that the Bureau's feasibility-level report, evaluating structural as well as operational alternatives to abate gas, should be coordinated with the Gas Abatement Study so that all of this information comes to the region at the same time, Ruff said. Also, the gas abatement effort should be coordinated with the region's fishery agencies and tribes; it was further suggested that technical review of the Bureau's study could take place either at FFDRWG or at the DGT. The SCT could be used for overall project coordination, Ruff said.

The group spent a few minutes discussing what is in the 1998 supplemental BiOp relative to Mid-Columbia dissolved gas abatement. COE's Dave Ponganis said the draft BiOp includes the following language:

> **"The action agencies, in coordination with NMFS and the Regional Forum, shall jointly investigate operational and structural gas abatement measures at Grand Coulee and Chief Joseph, as part of a systemwide evaluation of gas abatement measures. The action agencies shall submit an interim status report to NMFS by April 1999, stating the findings of these investigations at Grand Coulee, which could be incorporated into a systemwide evaluation by the end of 2000. The action agencies shall seek Congressional approval and funding as necessary to implement**

any feasible actions."

The point is that the Bureau's efforts need to be coordinated with the DGAS work the Corps has ongoing at the other federal projects, said Ruff. I would also observe that people need to think about the time-frames for this work laid out in the draft 1998 BiOp, said Anderson – are these the correct milestones?

The group provided a few additional specific comments – on the forebay TDG and inflow assumptions used in the modeling process, on DGAS program goals, on funding sources for the abatement work. The discussion turned to Canadian water quality issues; Ruff reminded the group of the upcoming transboundary conference, at which many of these issues will be discussed. EPA's Jack Gackstatter noted that he has been asked to put together some basic facts about current and planned dissolved gas monitoring and abatement activities in Canada and the Pend Oreille system. I plan to present that information at the conference, he added.

Boyce suggested that the investigation of gas abatement alternatives at Grand Coulee also needs to include a look at the role of spill for lack of load or lack of transmission system reliability on the TDG situation at that project.

Any comments on these comments from the Bureau? Ruff asked. We need some time to review and digest them before we offer any comments of our own, replied Monte McLendon of USBR. The summary of the comments we have provided today will be reflected in the minutes, said Ruff.

BPA's Phil Thor offered one further observation, asking that the other SCT members look carefully at the above-quoted paragraph from the 1998 supplemental Biological Opinion, so that, when they provide comments to NMFS, they make sure that this section of the BiOp accurately reflects today's discussion. Because as it's presently written, said Thor, I don't think it really says what we need it to say. I would also encourage you to look closely at the dates contained in this paragraph, he said, because I don't see much point in specifying a deadline the region is going to be unable to make.

Moving on, Anderson distributed the following study plan for gas abatement at Chief Joseph Dam:

Project Goal: Improve water quality and salmon and steelhead survival by reducing TDG supersaturation below Chief Joseph Dam.

Project Objectives: The project objectives are as follows:

- Assess the causes and impacts of total dissolved gas at Chief Joseph Dam
- Define the gas reduction flow objectives at Chief Joseph Dam
- Identify appropriate cost-effective long-term gas abatement measures to:

1. Reduce air entrainment through
   – construction of spillway flow deflectors
   – other suitable structural additions/modifications

2. Reduce the frequency of spill by:
– revising system spill/generation priority
– revising system flood control rule curves
– increasing powerhouse hydraulic capacity

3. Identify type and extent of role to be played by CHJ under systemwide gas abatement scenario

This is actually an outline for a study plan, not really a finished study plan, Anderson said – it is primarily some thoughts from COE Seattle District about what they feel would be important to address. Our plan is to produce a draft study plan for SCT and DGT review in time for discussion at the May SCT meeting, he added. Anderson asked that any comments on this study plan outline be provided to the Corps as soon as possible.

VII. Development of a Systemwide Approach to Dissolved Gas Management.

We have been talking about forming an ad hoc committee, including both SCT and DGT members and others, to begin work on a systemwide approach to dissolved gas management, Hevlin said -- I think the discussion we've just had really highlights the need for such an effort. At the last IT meeting, the SCT was instructed to move forward with this initiative, to develop a steering committee and to start identifying the work needed to move this effort along.

Do you perceive the need to create a new work team to undertake this task? asked Thor. I think it would be most appropriate to form a new ad hoc committee, Hevlin replied – the DGT is maxed out with their current work load, so I don't think it would be appropriate to ask them to take this on as well. I think it would be best to form a steering committee to start outlining the work that will be needed, then ask that group to report back to the SCT.

The group spent a few minutes trying to define the scope of this proposed effort. My sense of the IT's assignment was that we were to form a steering committee to assess what needs to be done, who's going to do the work, how long it will take, how much it will cost, what the issues are, said Ruff. So it's a very general assignment to develop recommendations for IT approval, said Boyce. That's correct, Ruff replied. We were hoping that, at today's meeting, we could at least begin by identifying the organizations that would need to be represented on such a steering committee. After some minutes of discussion, it was agreed that EPA, Canada, all of the affected states, BPA, the Corps, USBR the Council and the Tribes should be invited to participate in this steering committee, as should the Columbia Power Corporation, the Mid-Columbia PUDs, Idaho Power and Seattle City Light.

Jim and I will help coordinate this effort, put the steering committee together and coordinate an initial meeting, said Hevlin -- we'll send out notification once that meeting has been planned.

VIII. FY'99 CRFM Program.

Ruff said the most recent word he has received from Senate staff in Washington, D.C. is that it is probably not realistic to expect that the FY'99 CRFM program will be funded at the $117 million level shown in the current spreadsheet. Instead, we should probably expect to get no more than the $95 million we got in FY'98. Ruff said. With that in mind, we should probably start discussing project priorities sooner, rather than later.

Anderson distributed Enclosure E, the most recent iteration of the CRFM FY'99 spreadsheet, dated March 16, 1998. There was general agreement with Ruff's observation that it is important for the SCT to get a jump on FY'99 prioritizations; it was agreed to begin that process as soon as possible. In response to a question from Boyce, Anderson said the one-page research summaries for the proposed work in FY'99 will be available soon; the Corps' plan is to send out a package of preliminary FY'99 CRFM work plans with the one-page AFEP summaries attached. You will also get the one-pagers from O&M, and from SRWG, Anderson said; we'll send those packages to the SCT, FFDRWG, SRWG and FPOM memberships by next week. However, until everyone has a chance to review that package, it doesn't make much sense for us to start arguing about funding levels, Anderson said.

One other item, Anderson said – we are currently over-program fairly significantly in FY'98. The Corps is going to try to bring some money into the CRFM program; it looks like we should be able to do that, but we will then have to repay those funds out of the FY'99 budget. In response to a question, Anderson said the Corps may be as much as $7 million over the CRFM budget in FY'98. He added that the FY'98 surface collector work at Lower Granite is additional funding; there is also an additional $1 million for the Lower Snake Feasibility project, as well as funds that have to be paid to USBR for additional flow augmentation.

There are some additional options to reduce the amount we're over program, Anderson continued – for example, we could decide not to construct John Day extended-length screens this year. The problem is, we're already $20 million over-budget in FY'99, said Boyce. It's a pinch, agreed Anderson, but that's the nature of this game. We'll continue this discussion in April, once the package is received from the Corps, Ruff said.

IX. Criteria for Prioritizing FY'99 CRFM Program Items.

Hevlin distributed Enclosure F, the revised SCT prioritization criteria list. What I would like to be able to do, he said, is use these criteria weightings as we begin prioritizing the FY'99 CRFM program items. The idea is that we would look at each item in the FY'99 CRFM program, and weight them according to each of these criteria. For example, the project that provides the highest known survival benefit would receive 17 points, the next-highest would receive 16 points and so on. We would then move on to the project that would benefit the greatest number of fish, and give that a score of 12. Projects that would result in negative passage impacts would receive a negative score, he added.

Hevlin asked that the other SCT members begin to consider the current FY'99 CRFM

spreadsheet in light of this list of criteria; at our next meeting, he said, we'll go through a few projects together, then ask everyone to take that home and develop their own list of FY'99 priorities.

X. Next SCT Meeting Date and Agenda Items.

The next meeting of the Implementation Team was set for Thursday, April 16, beginning at 9 a.m. in NMFS' Portland offices. It was further agreed that the May SCT meeting will be held at Grand Coulee Dam on May 21, to be preceded on May 20 with tours of Rock Island and Rocky Reach Dams and followed on May 22 by a tour of Chief Joseph Dam. Meeting notes prepared by Jeff Kuechle, BPA contractor.